

CLAIMS

1. A method of generating x-ray or EUV radiation, comprising the steps of:
  - 5 (i) urging a target material through a flexible capillary tubing from an input end to an output end, said target material exiting the capillary tubing in liquid state into an interaction chamber, such that a target jet is formed in the interaction chamber; and
  - 10 (ii) directing at least one energy beam onto said target jet, the energy beam interacting with the target jet in the interaction chamber to generate said x-ray or EUV radiation;  
wherein the target material exits the capillary
  - 15 tubing through an orifice at said output end, said orifice being an integral part of the capillary tubing.
2. A method as claimed in claim 1, wherein the length of the capillary tubing between its input end and its output end is no less than 10 cm.
3. A method as claimed in claim 1 or 2, wherein target material is urged into the input end of the capillary tubing outside the interaction chamber, target material thereby being fed into the interaction chamber via said capillary tubing.
4. A method as claimed in any one of the preceding claims, wherein the target material is in gaseous state at the input end of the capillary tubing, and wherein the target material is condensed during its propagation from the input end to the output end of the capillary tubing, to exit through said orifice in liquid state.
- 35 5. A method as claimed in any one of the preceding claims, wherein target material is fed through a flexible capillary tubing having a plurality of holes, in order to

form a plurality of parallel target jets in the interaction chamber.

6. An arrangement for generating x-ray or EUV  
5 radiation, comprising:

- a source of target material;
- an interaction chamber;
- an energy source for generating an energy beam;
- an orifice having an opening into the  
10 interaction chamber;
- a flexible capillary tubing connecting the source of target material to the orifice;
- means for urging target material from the source of target material, via said capillary  
15 tubing, out through said orifice in a liquid state to form a target jet in the interaction chamber; and
- means for directing the energy beam from the energy source onto the target jet to interact  
20 with the same, thus producing said x-ray or EUV radiation;

wherein the orifice is an integral part of the capillary tubing.

25 7. An arrangement as claimed in claim 6, wherein the length of the capillary tubing between its input end and its output end is no less than 10 cm.

30 8. An arrangement as claimed in claim 6 or 7, wherein the capillary tubing is made from fused silica.

35 9. An arrangement as claimed in any one of the claims 6 to 8, wherein the source of target material is arranged outside the interaction chamber, said capillary tubing forming a passageway for target material into the interaction chamber.

10. An arrangement as claimed in any one of the claims 6 to 9, wherein the background pressure inside the interaction chamber is about  $10^{-6}$  Bar.

5 11. An arrangement as claimed in any one of the claims 6 to 10, wherein the orifice is comprised of a taper formed at the output end of the capillary tubing.

10 12. An arrangement as claimed in any one of the claims 6 to 11, comprising a flexible capillary tubing having a plurality of longitudinal holes arranged to form a plurality of parallel target jets in the interaction chamber when target material is fed through said tubing.

15 13. Use of a flexible capillary tubing having an integral orifice at an output end thereof, for supplying target material from a source of target material to an interaction chamber, in order to form therein a jet of target material for interaction with an energy beam to 20 generate x-ray or EUV radiation.

14. Use of a flexible capillary tubing as claimed in claim 13, wherein the length of the flexible tubing is no less than 10 cm.

25 15. Use of a flexible capillary tubing as claimed in claim 13 or 14, wherein said capillary tubing is made from fused silica.

30 16. Use of a flexible capillary tubing as claimed in any one of the claims 13 to 15, wherein the orifice is comprised of a taper of the capillary tubing at the output end thereof.

35 17. Use of a flexible capillary tubing as claimed in any one of the claims 13 to 16, wherein target material is fed into the capillary tubing in gaseous state and made

to condense during its propagation through the capillary tubing, such that target material exits through the orifice in liquid state to form the target jet in the interaction chamber.

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18. Use of a flexible capillary tubing comprising a plurality of longitudinal holes, each of said holes having an integral orifice at an output end thereof, for supplying target material from a source of target 10 material to an interaction chamber, in order to form therein a plurality of parallel jets of target material for interaction with an energy beam to generate x-ray or EUV radiation.

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